

# “Neglected nipples”: acanthosis nigricans-like plaques caused by avoidance of nipple cleansing

Grazyna Kaminska-Winciorek<sup>1</sup>, Jerzy Wydmanski<sup>1,2</sup>, Alon Scope<sup>3</sup>, Giuseppe Argenziano<sup>4</sup>,  
Iris Zalaudek<sup>4,5</sup>

1 Center for Cancer Prevention and Treatment, Katowice, Poland

2 Department of Conventional and Intraoperative Radiotherapy Maria Skłodowska-Curie Memorial Cancer Center and Institute of Oncology Gliwice Branch, Gliwice, Poland

3 Dermatology Department, Sheba Medical Center and Sackler Faculty of Medicine, Tel Aviv University, Tel-Aviv, Israel

4 Skin Cancer Unit, Arcispedale Santa Maria Nuova- IRCCS, Reggio Emilia, Italy

5 Department of Dermatology, Medical University of Graz; Graz, Austria

**Keywords:** neglected nipples, acanthosis nigricans-like, hyperkeratosis, nipple hygiene, dermoscopy, dermatoscopy

**Citation:** Kaminska-Winciorek G, Wydmanski J, Scope A, Argenziano G, Zalaudek I. “Neglected nipples”: acanthosis nigricans-like plaques caused by avoidance of nipple cleansing. *Dermatol Pract Concept*. 2014;4(3):17. <http://dx.doi.org/10.5826/dpc.0403a17>

**Received:** March 20, 2014; **Accepted:** April 11, 2014; **Published:** July 31, 2014

**Copyright:** ©2014 Kaminska-Winciorek et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

**Funding:** Study supported in part by the Italian Ministry of Health (RF-2010-2316524)

**Competing interests:** The authors have no conflicts of interest to disclose.

All authors have contributed significantly to this publication.

**Corresponding author:** Grazyna Kaminska-Winciorek MD, PhD, Center for Cancer Prevention and Treatment, 40-060 Katowice, Fliegera Av. 16, Poland. Tel. + 48 698626208; Fax. +48 322068113. Email: [dermatolog.pl@gmail.com](mailto:dermatolog.pl@gmail.com)

**ABSTRACT** **Background:** Acanthosis nigricans (AN) develops sporadically or in association with obesity, insulin-resistance and dark pigmentary phenotype. Unusual clinical presentations of AN may be diagnostically vexing.

**Objectives:** The aim of the report is to present unusual clinical and dermoscopic pictures of hyperkeratotic, brownish lesions of the nipples resembling acanthosis nigricans. **Patients/Methods:** Data including clinical and dermoscopic features of two patients with the “neglected nipples”: acanthosis nigricans-like (AN-like) hyperpigmented plaques caused by avoidance of nipple cleansing.

**Results:** Beside the anamnestic clue, presentation of AN-like plaques in the “neglected nipples” is limited to the breasts, in the absence of involvement of other flexural sites classically affected by AN. Dermoscopy aids the exclusion of a tumor, as it reveals exclusively structureless, brown-gray-black hyperkeratosis in the absence of criteria associated with melanocytic or non-melanocytic skin neoplasms of the nipple. The “neglected breasts” are easily treated by keratolytic creams and hygiene.

**Conclusions:** The “neglected nipples” condition, presenting as bilateral AN-like papules and plaques of the nipples, is due to avoidance of cleansing of the nipple area, resulting in accumulation of keratotic cellular debris.

## Introduction

Acanthosis nigricans (AN) is a skin condition that develops sporadically or in association with obesity, insulin-resistance and dark pigmentary phenotype [1,2]. In rare cases, AN represents a paraneoplastic syndrome associated with internal malignancies, mostly intra-abdominal gastrointestinal cancers [1,3].

Both benign and malignancy-associated AN present initially as symmetrically dispersed darkened, slightly raised plaques that later progress to thick, keratotic, hyperpigmented, velvety plaques. AN may occur at any anatomic site, but the flexural sites of the limbs, armpits and groins, as well as the neck folds are most commonly affected [1].

The workup associated with the diagnosis of AN should exclude insulin resistance and internal malignancies; if an underlying malignancy is found, its treatment may lead to resolution of the AN. In idiopathic cases, treatment aims to improve the cosmetic appearance and includes keratolytic creams or laser ablation. Diet may be of benefit in obese patients [1,2].

Although the clinical presentation of AN usually points at the correct diagnosis, unusual clinical presentations of AN may be diagnostically vexing. Herein, we report on two patients presenting with similar hyperpigmented plaques affecting the nipples and discuss the common underlying cause and differential diagnosis.

## Case presentation

### Case 1

A 20-year-old woman was referred to dermatological surgery because of gradually expanding keratotic plaques on both breasts. The patient presented a fair skin phototype and normal body mass index. Her medical and family histories were unremarkable and she denied taking any medications. On clinical examination, symmetrically arranged, diffuse, yellowish to dark brown hyperkeratotic papules and plaques were bilaterally seen on the nipples, areolas and



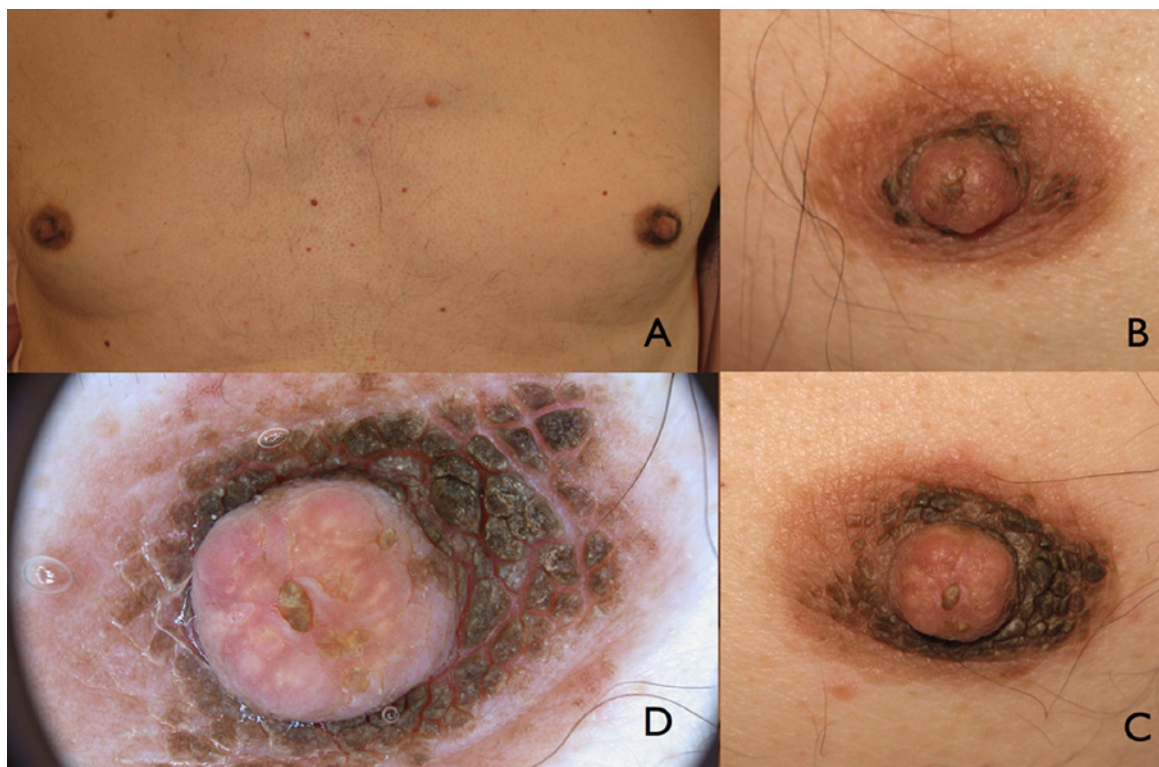
**Figure 1.** Clinical image of acanthosis nigricans-like lesions in a 20-year old woman. The lesions arose because she has avoided scrubbing the breasts. Diffuse velvety, hyperkeratotic, yellow, brown to black papules and plaques are seen on both nipples, areolae and surrounding breast area are seen. Insert: Dermoscopy of the keratotic papules and plaques shows focally arranged, structureless gray-brown, angulated keratotic clods. [Copyright: ©2014 Kaminska-Winciorek et al.]



**Figure 2.** Clinical image of the breasts of the patient shown in figure, one month after topical treatment with keratolytic cream and hygienic teaching. Complete clearance of the keratotic papules and plaques is seen. [Copyright: ©2014 Kaminska-Winciorek et al.]

surrounding breast areas (Figure 1). No other body sites were affected. Dermoscopy revealed structureless black to yellowish keratotic clods (Figure 1 insert). Because the lesions were strictly limited to the breasts, the patient was interviewed in detail regarding her hygienic habits and in particular, whether she avoids scrubbing the breast area when taking a shower or drying with a towel; indeed, the patient confirmed that she avoids direct cleansing of the breasts due

to fear and discomfort. Subsequently, the patient was given teaching on adequate cleansing methods and was instructed to apply a topical keratolytic cream (5% salicylic acid) for one month. The patient was further offered psychological consultation but declined. At the one-month follow-up visit, the keratotic skin papules and plaques completely disappeared (Figure 2). At subsequent follow-up visits 3 and 6 months later, no recurrence was detected.



**Figure 3.** (A) Clinical overview of the thorax of a 65-year-old man presenting with acanthosis nigricans-like lesions of the areola. Close up of the left (B) and right (C) areola reveals keratotic, polygonal brown-gray plaques at and around the nipple. D. Dermoscopy of the plaques of the left nipple reveals keratotic, structureless, brown-gray angulated clods. [Copyright: ©2014 Kaminska-Winciorek et al.]

## Case 2

A 65-year-old man was referred to our skin cancer clinic because of keratotic plaque on the left nipple, tentatively diagnosed by the referring physician as seborrheic keratosis on the nipple. His medical history was unremarkable. At clinical examination, diffuse keratotic, brown to black papules coalescing to plaque were observed on the left areola, and to a lesser extent, also on the right areola (Figure 3A, 3B and 3C). Dermoscopically, the lesions presented as gray-brown, angulated, keratotic clods (Figure 3D). The rest of the skin examination was unremarkable. Because of the symmetric arrangement of the keratotic plaques, the patient was asked about his washing routine and confirmed that he avoids washing or scrubbing the nipples because of a feeling of discomfort when touching them. The patient was further offered psychological consultation but declined. Treatment with 5% salicylic acid cream for one month and instruction for methodical washing and scrubbing of the areola areas resulted in complete resolution of the keratotic lesions. At subsequent follow-up visits 3 and 6 months later, there was no recurrence of the keratotic lesions.

## Conclusions

Hyperkeratosis of the nipple area has been reported in association with a range of diseases including benign and malignant

forms of AN, atopic dermatitis, Darier disease, ichthyosis, hormonal disorders (diabetes mellitus, insulin resistance and thyroid disease), but also after pregnancy or in the context of nevoid hyperkeratosis of the nipple and areola or epidermal nevus [1,3,4,5].

However, the cases presented herein emphasize the importance of anamnestic interrogation, before proceeding to any laboratory workup to exclude conditions that could underlie recent onset AN-like plaques. Indeed, progressive accumulation of keratotic cellular debris around the nipple due to reluctance to cleanse this area can result in the clinical presentation of new-onset AN-like plaques, a process that we refer to as the “neglected nipple.” The precise reason for neglecting the nipple hygiene remains to be elucidated, as both of our patients refused psychological consultation; the avoidance may simply stem from increased local sensitivity to scrubbing or a more complex, psychological process.

Besides the anamnestic clue, clinical clues to diagnosis of the “neglected nipple” include the presentation of symmetrically arranged hyperkeratotic papules and plaques strictly limited to nipple, areola and surrounding breast region, in the absence of involvement of any of the other body sites classically affected by AN. The symmetrical and bilateral breast involvement differentiates the “neglected breast” from pigmented skin neoplasms of the nipple, including melanocytic nevi, melanoma, pigmented Paget’s disease and sebor-

rheic keratosis; with few exceptions, the majority of these neoplasms will develop on only one nipple.

Dermoscopy further aids the exclusion of a tumor, as it reveals exclusively structureless brown-gray-black hyperkeratosis in the absence of criteria associated with melanocytic or non-melanocytic skin neoplasms of the nipple.

In the differential diagnosis terra firma-forme dermatosis, wrongly considered a condition arising out of inadequate corporal hygiene, should also be taken into account. It is characterized by occurrence of dirty brown hyperkeratosis on the neck and ankles, suggesting negligence and affects both sexes equally [6].

In conclusion, the “neglected nipples” condition, presenting as bilateral AN-like papules and plaques of the nipples, is due to avoidance of cleansing of the nipple area, resulting in accumulation of keratotic cellular debris. The diagnosis is confirmed by history and the condition resolved by simple teaching on hygienic methods and transient keratolytic topical treatment. It remains to be further elucidated whether

the neglected nipples herald an underlying psychological problem.

## References

1. Braun Falco O, Plewig G, Wolff HH, et al. Disorders of keratinization. In: Braun Falco O, Plewig G, Wolff HH, Burgdorf WHC (eds.). *Dermatology*. 1st ed. Berlin, Heidelberg, New York: Springer-Verlag, 2000:742-46.
2. Boza JC, Trindade EN, Peruzzo J, et al. Skin manifestations of obesity: a comparative study. *J Eur Acad Dermatol Venereol*. 2012;26:1220-23.
3. Lee HW, Suh HS, Choi JC, et al. Hyperkeratosis of the nipple and areola as a sign of malignant acanthosis nigricans. *Clin Exp Dermatol*. 2005;30:721-22.
4. Schwartz RA. Hyperkeratosis of nipple and areola. *Arch Dermatol*. 1978;114:1844-45.
5. Higgins HW, Jenkins J, Horn TD, et al. Pregnancy-associated hyperkeratosis of the nipple: a report of 25 cases. *JAMA Dermatol*. 2013;149:722-6.
6. Pallure V, Ameline M, Plantin P, Bessis D. Terra firma-forme dermatosis. *Ann Dermatol Venereol*. 2013;140:693-8.